

AMENDMENT UNDER 37 C.F.R. § 1.111
Application No.: 10/564,999

Attorney Docket No.: Q91906

AMENDMENTS TO THE DRAWINGS

Figures 6 and 7.

Attachment: Replacement Sheets

REMARKS

As a preliminary matter, Applicants wish to note that an Amendment had been made during the International Stage in the Japanese language, following the filing of a Demand to the JPO to enter Chapter II. It appears that the USPTO has not considered the Amendment possibly because the International Bureau did not forward the amendment made to the specification and claims. Rather than rework the prosecution on the international stage, Applicants are simply making the amendments to the present application.

Claims 1 and 2, all the claims pending in the application, stand rejected. Applicants have amended claim 1 and added claims 3 and 4. Applicants have endeavored to bring the claims pending in the present US application into line with the changes submitted during the international stage under Chapter II. Present claim 1 differs slightly from the claim in the international application because it retains an affirmative recitation of the "urging members," and a direct reference to the members that appeared in the Amendment to the international application. Claims 3 and 4 each have the same text as the new claim added by amendment to the international stage, but avoid multiple dependent claims and the accompanying fees.

Applicants also have amended the specification in the manner submitted in the International Stage. Support for these amendments is in the original specification in Fig. 2 and at least at page 11, lines 6-11 and at page 14, lines 2-9.

Drawing Objections

The Examiner objects to the drawings because he asserts that Figures 6 and 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

Applicants have amended the figures accordingly.

Claim Rejections – 35 U.S.C. § 112

Claims 1 and 2 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite. This rejection is traversed for at least the following reasons.

In explaining the rejection, the Examiner notes that the term "close" in claim 1 (line 7) is a relative term which renders the claim indefinite. The Examiner observes that the term "close" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention, citing *Seattle Box Co., Inc. v. Industrial Crating & Packing, Inc.*, 221 USPQ 568, 574.

Applicants respectfully submit that the meaning of "close" in the original Japanese text is the same as that of "tight," described at page 5, lines 12 and 16. Nonetheless, Applicants have cancelled the word "close," in order to remove this basis for rejection. The specification has been clarified.

Claim Rejections – 35 U.S.C. § 102

Claims 1 and 2 are rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent Document 2001-205634 (JP '634). This rejection is traversed for at least the following reasons.

The present invention is an improvement over the "prior art design" illustrated in Figs. 6 and 7 of the present application. The improvement involves adding a spacer ring 14, which is sandwiched between the bolster plate 9 and the outer ring 8. The bolster plate 9 and outer ring 8 are coupled to each other by a bolt 12, which has sufficient excess length so that the ring 14 is slideable in the direction of arrows A and B, as explained at page 11, lines 6-11. The top surface of the spacer ring 14 is fixed to the underside surface 9A of the bolster plate with a bolt 11.

As illustrated in Fig. 2 and explained at pages 11 and 12 of the specification, the spacer ring 14 is fixed to the outer ring 8 by a bolt that extends through a collar 20, which is seated in a hole 19, and engages the top of the ring 8. The spacer ring 14 also has a lower hole 15 that receives a spring 17, which is sandwiched between an upper washer 18 and a lower washer 16. As illustrated in Fig. 3, the length of the collar in the axial direction is set so as to cause the disk springs to undergo some deflection from a free length, and when the bolt 12 is tightened, the disk springs undergo a little deflection, to provide a pre-load to the outer ring so that the bolster plate 9, spacer ring 14 and outer ring 8 can be smoothly moved in unison without backlash, as explained at page 12.

As a consequence of this arrangement, as explained at pages 13 and 14, the clamping force acting on the respective sector molds 6 is not dependent on a pressing force of the elevating mechanism pushing down on the bolster plate 9, but is dependent on the urging force of the disk springs 17. The clamping force is made about half of a deflection at the time of maximum load, to absorb variation in dimensions regardless of variations in the dimensions. In short, the spacer ring 14 is slidably installed on the top surface of the outer ring through urging members 17 having an urging force substantially equivalent to a clamping force of the mold at the time of vulcanization.

JP '634

The Examiner points to the illustrations in Fig. 6 of JP '634 and the disclosure at paragraphs 18, 19 and 28 of JP '634 for relevant teachings. The Examiner asserts that the reference teaches a split-type tire mold comprising a lower side mold 7, a reciprocating upper side mold 6, 10, a segment mold ring 8, 11 comprising a plurality of circumferential segments, an axially movable outer ring 13 provided on the radially outer side of the segment mold ring for radially moving the segment mold ring and a bolster plate 3 for causing the outer ring 13 to move in the axial direction. The Examiner notes the use of a spacer ring 41, 46, and preloaded spring urging members 43 inserted between the spacer ring 41, 46 and the outer ring 13. The Examiner asserts that the springs are capable of having an urging force substantially equivalent to a mold clamping force.

As to the limitations in the claim with respect to the clamping force, the Examiner asserts that the recitation of a mold clamping force relates to the intended use of the claimed apparatus and does not find this to be a basis for patentability of the apparatus, *In re Finsterwalder*, 168 USPQ 530. Similarly, he views the limitation as related to the manner or method in which a machine is to be utilized, citing *In re Casey*, 152 USPQ 235 and *Ex parte Masham*, 2 USPQ2d 1647.

A difference between the present invention and the JP '634 reference is that the elastic member 43 is interposed between the upper spring bearing member 41 and the lower spring bearing member 42, disposed inside the outer ring 13. Also, the top surface of the upper spring bearing member 41, on the inner peripherals side thereof, is butted against the nut 45 screwed to the upper end of the clamp rod 40 while the top surface of the upper spring bearing member 41,

on the outer peripheral side thereof, is butted against the underside surface of the bolster plate 3 through the distance ring 46. Further, the under side surface face of the lower spring bearing member 42, on the inner peripheral side thereof is butted against the protrusion 40a of the clamp rod 40.

With the tire mold container as described in JP 634, the outer ring 13 and the distance ring 46 (corresponding to the spacer ring) each are a separate unit. The construction differs completely from the claimed invention with respect to "the spacer ring is slidably installed on the top surface of the outer ring through said urging members" where the urging members have an urging force substantially equivalent to a clamping force of the mold at the time of vulcanization.

Also, the cited portion of JP 634 at paragraph 28 states that "upon the bolster plate 3 starting to move up, the upper spring bearing member 41 is pushed u p by the agency of a compressive reaction force of the elastic member 43 so that the clamp rod 40 is moved up through the nut 45, and as a result, the top surface of the retainer piece 44 is pressed into contact with the top retaining face of the circular hole 47b to get thereby engaged therewith. In this state the outer ring 13 is being pulled toward the bottom plate by the agency of the compressive reaction force of the elastic member 43. For this reason, a strong clamping force inward in the radial direction comes to act on the segments 11, through a sloping face of the outer ring, on the inner periphery thereof, and sloping faces of the segments 11, on the outer periphery thereof. Further the top end of the clamp rod 40 comes out of a joint 48a of the actuator 48 accompanying an upward move of the bolster plate 3. Thus, it is the compressive reaction force of the elastic member 43 after the bolster plate is caused to make an upward move, and the top end of the clamp rod comes out of the joint 48a of the actuator 48 that the strong clamping force inward, in the radial direction, is caused to act on the segments 11, so that when adjustment of the compressive reaction fore of the elastic member 43 is attempted, it is necessary to take into consideration not only the compressive reaction force at the time of the upper spring bearing member 41 being pushed up by the bolster plate 3, but also a shift distance of the upper spring bearing member 41, relative to the clamp rod 40, at the time of the bolster plate 3 move up thereafter. Consequently, the adjustment of the compressive force is extremely difficult.

On the other hand, according to claim 1, the spacer ring is slidably installed on the top surface of the outer ring through urging members. Also, the members have an urging force

substantially equivalent to a clamping force of the mold at the time of vulcanization to thereby push down the outer ring with the spacer ring. As a result, fabrication variation in mold dimensions is absorbed the agency of deflection of the urging members without the need for any shim adjustment. Also, by simply adjusting a push down amount of the spacer ring that is a deflection in an elastic member at the falling end of the bolster plate, it is possible to adjust to a proper clamping force regardless of the fabrication variation in the mold dimensions. Clearly, this differs for the description of the reference.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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